



Nadir Cal. and Ops. Update

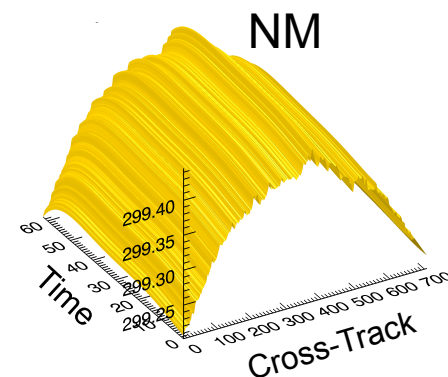
a follow-on to the Dec. 4 report

NM

- Significant intra-orbital variation (~ 0.03 nm)
- No significant long-term change (or seasonal cycle)

NP

- Small (~ 0.01 nm) intra-orbit variation
- Large seasonal variation; no evidence of long-term drift



V2.0 :

- parameterized NM intraorbital wavelength scale
- static long-term NM wavelength scale
- parameterized NP seasonal wavelength scale; no L-T drift
- Day 1 irradiance provided with its wavelength scale

Beyond V2.0 :

- scene-by-scene NM scale derived from Fraunhofer spectrum
- either scene-based or parameterized NP wavelength
- if latter, use solar wavelength regression for NP L-T drift+seasonal
- Day 1 irradiance provided with its wavelength scale

- Smear transients affect one wavelength for half of swath
- Smear/Bias corrections are small and predictable, so correct rather than just flag
- Transients are detected by threshold above median (Red line)
- Corrected values determined by interpolation between good values

Near SAA center – 25 transients detected

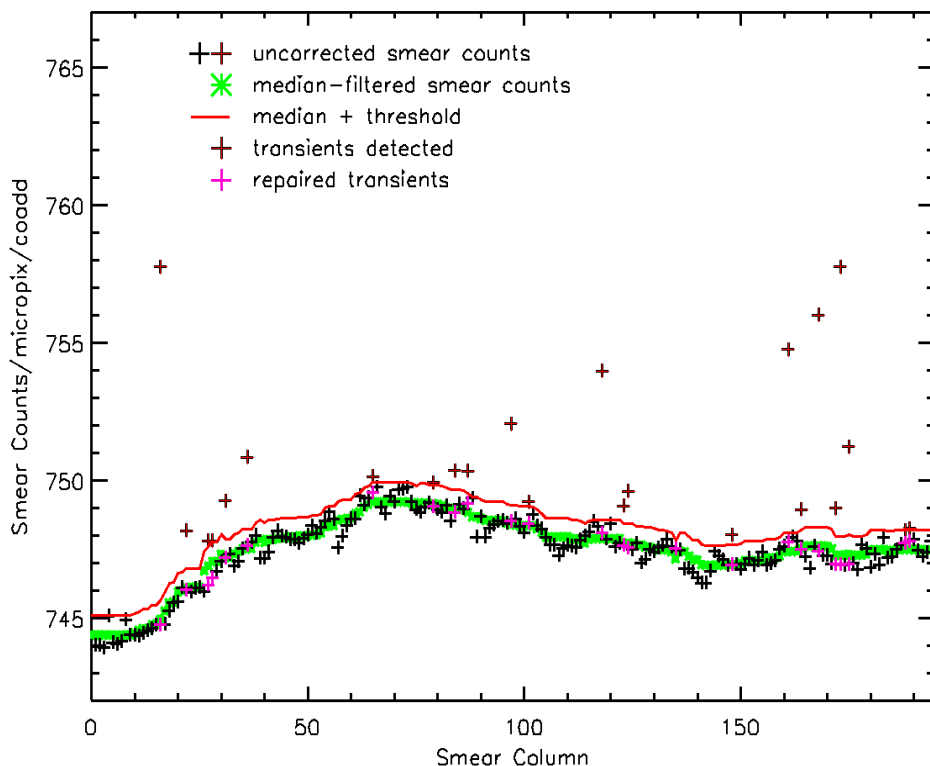


Image region
transients are more
difficult to detect than
smear transients

No transient flagging
in V2.0



SNPP Nadir Operations



Current

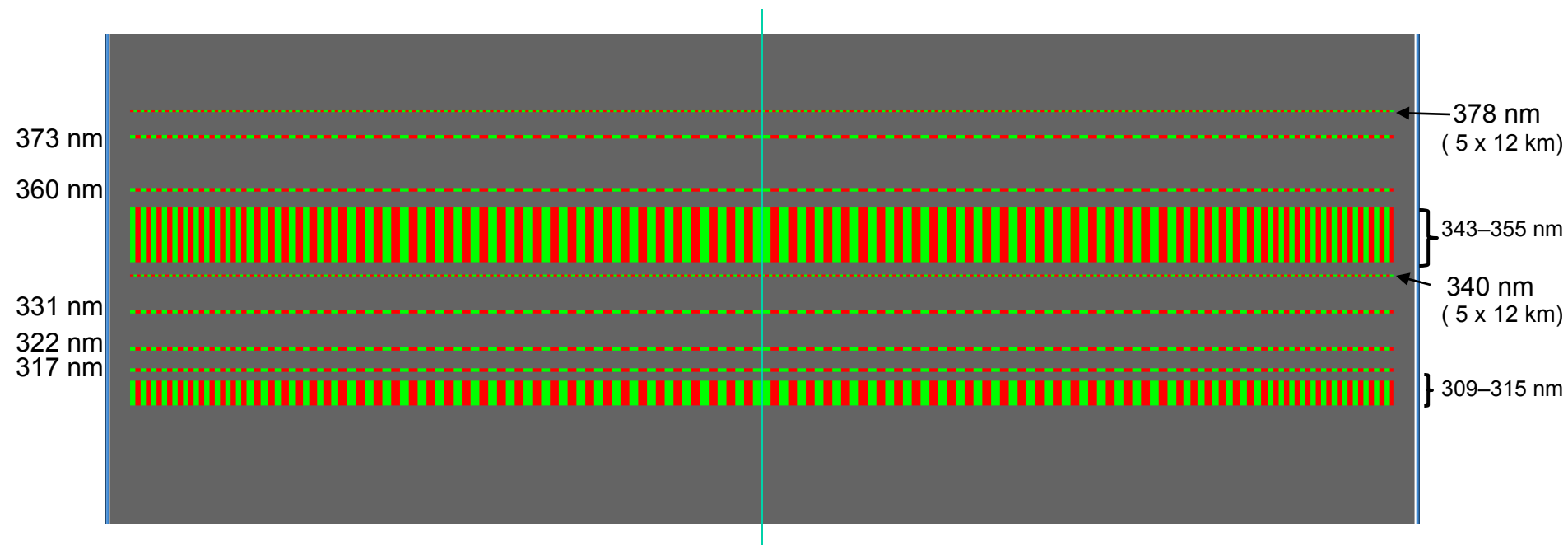
- 6 days/wk. 50 km (nadir) resolution; 300-380 nm contiguous
- 12-13 orbits/wk. HiRes (12x12 km); 309-378 nm with gaps
- 1 orbit/mo. Full Frame (3x50 km); 295-392 nm contiguous
- All NP data 250x250 km

Future

- NOAA working on upgrades to SDR processing
 - accommodate multiple spatial resolutions and spectral gaps
 - accommodate Flight Software upgrade, i.e. data compression
 - NP data at 50x50 km
- Full SDR implementation late this year or early 2016
- Potentially 6x-10x increase in Nadir data volume possible
 - We need to weigh multiple L2 product desires to optimize sample table and timing



Hi-res sample table runs 1 day/week



NM-only sample table for 12 x 12 km (at nadir)

- all current V8 wavelengths
- bands for Raman cloud height and SO₂
- higher resolution AI



Some sampling options



Assumes significant reduction in Limb sampling + data compression

- 17x17 km ; 300-380 nm contiguous

One variant would be 17x17 km; 302-380 nm **plus** 340 & 380 nm at 5x17 km

- 10x10 km; sparse spectral coverage (28 nm)

10x10 km; 310-336 nm; 340 & 380 nm at 5x10 km

10x10 km; 310-320 nm and 338-350 nm; 50x10 km for 320-338 and 350-380 nm

Etc.

- 12x12 km; sparse spectral coverage (45 nm)

Data with different spatial sampling are separated into different data groups in L1B product